

Developing Specialty-Specific Workplace Standards for Surgeons: A Framework to Support Sustainable Surgical Careers

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Structured Abstract

Surgeons face distinctive workplace demands that include prolonged work hours, unpredictable emergency duties, and institutional obligations extending beyond individual patient care. These conditions, compounded by productivity pressures, administrative burden, and limited control over clinical resources, have resulted in high rates of burnout and attrition within the surgical workforce. While several medical specialties have established formal workload and well-being standards, surgery lacks broadly accepted parameters defining sustainable clinical practice.

This article proposes a structured framework for the development of specialty-specific workplace standards for surgeons. The recommendations address call coverage, access to the operating room and clinic, inpatient census limits, clinical support, fatigue mitigation, and institutional accountability. The goal of this framework is to align surgeon well-being with patient safety and system efficiency, while promoting career longevity and workforce stability within the surgical profession.

Introduction

Surgery remains one of the most demanding disciplines in medicine. The professional identity of surgeons has long been intertwined with notions of self-sacrifice, continuous availability, and prioritization of patient needs above all else. While these values are foundational to the profession, they have also contributed to a culture that normalizes excessive workload, chronic sleep deprivation, and insufficient recovery.

Over recent decades, the landscape of surgical employment has shifted substantially. Increasing numbers of surgeons are now employed by hospitals, health systems, or large group practices. Even surgeons in independent practice must comply with institutional service requirements, including call coverage and inpatient responsibilities. Historically, surgeons have often been expected to maintain a schedule of early mornings, long hours, overnight and weekend emergencies, and constant availability. Regulations imposed by the Accreditation Council for Graduate Medical Education (ACGME) have limited trainee duty hours to 80 hours per week to protect learning and well-being—still double the standard workweek for most professions—yet no analogous standards exist for practicing surgeons.

Surgeon's commitment to professionalism and sense of obligation to patients may be exploited, intentionally or unintentionally, by the health systems in which they work, leading to oppressive call burden, patient census expectations that threaten quality and safety, and unrealistic expectations of clinical productivity.¹ Further, surgeons require quite specific and distinct resources from their health care system (e.g. OR and outpatient clinic access) that, if under-resourced, may create a major barrier to surgeon success in providing appropriate patient care, accomplishing expected productivity metrics, and in achieving the financial goals of both the health care system and the individual surgeon.

The persistence of traditional expectations has contributed to measurable distress within the surgical workforce. Burnout prevalence among surgeons consistently exceeds that of many other medical specialties, with large national studies reporting rates between 40% and 54%, depending on specialty, practice setting, and career stage.²⁻⁴ Burnout is associated with depression, substance use disorders, and suicidal ideation,⁵⁻⁷ and contributes to early retirement, reduced clinical effort, and workforce attrition.⁸ Higher levels of burnout are also associated with more medical errors and compromised patient safety.⁹ High clinical workload, loss of professional autonomy, inadequate compensation for non-work relative value unit (wRVU) activities, and administrative burden are among the primary drivers of burnout.¹⁰⁻¹²

In response to similar challenges, other medical specialties—including emergency medicine, anesthesiology, and radiology—have developed workload, fatigue, and coverage standards to support clinician well-being and patient safety.^{13,14} Surgery, however, continues to lack such guidance despite its high physical, cognitive, and emotional demands. The absence of standards not only threatens surgeon well-being but also has implications for patient safety, quality of care, and institutional sustainability.

This paper proposes a structured framework to support the development of voluntary specialty-specific workplace standards for surgeons, designed for use by surgical departments, health systems, and professional organizations.

Background and Rationale

Burnout and Workforce Impact

Burnout is characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment.¹⁵ Among surgeons, burnout is associated with higher rates of self-reported medical errors, reduced patient satisfaction, and increased turnover.^{16,17} The financial

consequences for health systems are substantial. Estimates suggest that the replacement cost of a surgeon—including recruitment expenses, onboarding, and lost productivity—often exceeds \$500,000 to \$1 million per physician.¹⁸

National survey data further illustrate the scope of the problem. In 2022, more than half of U.S. surgeons reported at least one symptom of burnout, and only 36% rated their work-life balance as satisfactory.¹⁹ Surgeons in employed positions frequently report diminished autonomy, increasing administrative demands, and unclear or unrealistic expectations regarding call and clinical responsibilities.

Exploitation of Professionalism

Surgical culture places extraordinary emphasis on professionalism, duty, and accountability to patients. However, this moral commitment can be inadvertently exploited within employment and coverage structures that depend on surgeon availability to address staffing shortages, extend call coverage, or absorb uncompensated administrative and compliance-related work. In many cases, this exploitation is not intentional but structural—arising from system designs that assume unlimited surgeon availability without corresponding safeguards.^{6,9,12,20} The implicit expectation of stoicism and endurance may discourage surgeons from seeking support or negotiating equitable working conditions.

Impact on Health Systems

The consequences of inadequate workplace standards extend beyond surgeon well-being. Fatigue and sleep deprivation are associated with impaired cognitive and psychomotor performance comparable to alcohol intoxication, with controlled studies demonstrating increased attentional failures and error rates after extended work hours.²¹ Surgeons practicing under conditions of excessive workload and fatigue face increased risk of performance degradation, with

implications for patient safety, operative efficiency, and team communication. Persistent institutional inaction also poses risks to quality metrics, accreditation standing, and workforce stability. Development of specialty specific workplace standards can help health systems by improving patient safety, decreasing costs of complications and surgeon turnover, improved operational efficiency, and clearer definitions of resource requirements for effective use of surgical specialists.

Framework Development

Frameworks developed by the American College of Surgeons Board of Regents follow a standardized, transparent, and evidence-informed methodology that is conceptually aligned with GRADE principles while allowing flexibility appropriate to diverse surgical contexts. Topic selection is guided by identified gaps in clinical practice, emerging evidence, and alignment with the strategic priorities of the College. Multidisciplinary expert panels are convened to ensure representation across relevant specialties, practice settings, and stakeholder perspectives. The proposed framework draws on existing literature relevant to the topic area, including peer-reviewed evidence addressing clinical, operational, and workforce considerations; benchmarking across medical specialties that have established comparable standards; and structured input from practicing surgeons and health system leaders to assess real-world feasibility. A structured review of the literature is conducted with explicit consideration of study design, risk of bias, consistency of findings, precision, and directness of evidence. Evidence is qualitatively categorized according to overall certainty (e.g., high, moderate, low) and interpreted in the context of anticipated benefits and harms, patient values and preferences, feasibility, and equity considerations. The framework provides both quantitative and qualitative standards across major domains of surgical practice and is intended to be adaptable across academic, community, and

resource-constrained environments. Framework elements and recommendations are developed through iterative consensus processes and are characterized by their intended direction and relative strength, informed by the balance of desirable and undesirable effects and confidence in the underlying evidence. All framework outputs undergo conflict-of-interest management, internal peer review, and formal approval by the Board of Regents prior to publication in the Journal of the American College of Surgeons

Framework Components and Recommendations

1. Call Schedule and Compensation

Call coverage is an essential but burdensome component of surgical practice. Excessive call frequency, particularly when associated with high callback intensity, is strongly associated with burnout and impaired performance.

Recommendations

- Define excessive call by both frequency and intensity (callback rate).
- Excessive call can be defined both by frequency of being available and “on call,” frequency of telephone calls for consultation, transfer, and treatment purposes, and frequency of having to return to the hospital to provide direct patient care.
- Metrics for frequency of call back (return to hospital while on call) should be calculated on an annual basis and updated annually.
- Suggested maximum call frequency:
 - ≤ 1 in 3 when callback rate $< 10\%$
 - ≤ 1 in 4 when callback rate 10–25%
 - ≤ 1 in 5 when callback rate 25–50%
 - ≤ 1 in 7 when callback rate $> 50\%$

- Call average more than 1 in 3 or in excess of the metrics above requires extra call compensation
- For shift-based services (eg, trauma or surgical critical care), more than four in-house 12-hour shifts per week should warrant additional compensation.
- For non-shift-based services requiring overnight in-house coverage (eg, cardiac or transplant operation), additional compensation should also be provided.
- Individuals covering more than one service or multiple facilities when on call should have consideration of the cumulative call impact of all call responsibilities in assessing application of the above framework
- Compensation for excess call should be calculated using the formula:

Mean total annual compensation of the call group (base + incentive + bonuses + administrative supplements) ÷ annual workdays = per diem rate.
- If call or service requirements change significantly before the annual reassessment (e.g., medical leave, retirement, attrition), the compensation for excessive call/service coverage should be recalculated based on the framework above.

2. Access to the Operating Room

Operating room (OR) access is a critical determinant of surgeon productivity and patient care.

Insufficient block time limits a surgeon's ability to meet institutional productivity expectations and contributes to inefficiency and delayed patient care.

Recommendations

- A full-time clinical surgeon (100% clinical full-time equivalent) should be allocated a minimum of two full OR block days per week (8–12 hours each).
- Many surgeons will need more than this to meet the productivity expectations of their health system.
- If compensation is based partly or completely by wRVU productivity:
 - Annual benchmark and expected wRVU targets must be provided to the surgeon annually and,
 - OR block adjusted based on the previous year's wRVU productivity per OR block in order for the surgeon to have realistic OR access to meet productivity benchmarks or targets
- OR prioritization policies should define procedural urgency, for example:
 - Stat: initiation <60 minutes
 - Emergent: 1–3 hours
 - Urgent: 3–24 hours
 - Semi-urgent: 1–3 days
 - Elective: >3 days

3. Access to Clinic

A full-time surgeon should have a minimum of one full clinic day per week. This may need to be significantly higher for specialties or practices with a large Evaluation and Management (E&M) component compared to procedural component of billing.

4. Resource Access

Surgeons must have reliable access to appropriate technology, staffing, and infrastructure to meet expected standards of safety and productivity. Examples include:

- Robotic and endoscopic equipment
- Adequate OR staffing and anesthesia availability
- Appropriate level surgical assistant
- Intensive care unit and step-down unit support
- Specialty-trained nursing staff and advanced practice providers (APPs)
- Scrub nurses/techs, circulating nurses, anesthesia providers and ancillary staff should have sufficient specialty training to safely and efficiently support the surgeon to accomplish optimal patient care
- Access to emergency teams and cross-training for urgent/emergent operations

Persistent deficits in these resources should be addressed through institutional investment rather than absorbed by increased workload or coverage by clinicians.

5. Inpatient Census

Safe inpatient coverage requires consideration of patient acuity and team composition.

Recommended limits

- ≤ 20 acute care patients or ≤ 10 ICU patients per attending surgeon
- With additional clinician support (residents, fellows, APPs), capacity may increase to ≤ 40 acute care patients or ≤ 20 ICU patients.
- Adequate support is defined as one APP or surgical resident per 10–15 acute care patients or per 5–10 ICU patients.

- Persistent census above recommended limits (>25% of days annually) should prompt resource redistribution or service expansion.

6. Clinical Support and Team Composition

Institutions should provide appropriately trained surgical assistants, OR team members, anesthesia personnel, and APPs. Surgeons performing complex or high-acuity procedures should have access to a second attending surgeon when clinically indicated. Cross-training and emergency team readiness are essential to mitigate risk during non-elective care.

7. Fatigue Mitigation and Wellness Support

Surgeons frequently practice under conditions of sleep deprivation and sustained stress.

Recommendations

- Implement formal policies allowing rest or relief following extended duty or overnight call.
- Permit rescheduling or redistribution of elective responsibilities after high-intensity call periods.
- Provide confidential counseling and mental health resources, ideally external to the direct supervisory chain.

Fatigue mitigation should be recognized as a patient safety intervention rather than a discretionary wellness benefit.

8. Compliance and Administrative Burden

Mandatory compliance modules, electronic health record training, and institutional education represent non–revenue-generating activities that erode clinical time and negatively impact physician well-being.

Recommendation

- Mandatory training exceeding five hours annually should be compensated using the excess call compensation formula converted into an hourly rate.

Discussion

The specialty of surgery encompasses diverse disciplines with variable demands, cultural norms, and differences in the common barriers and problems that challenge safe and efficient patient care. The House of Surgery includes ophthalmologists, orthopedic surgeons, colorectal, general, pediatric, otolaryngology, urology, transplant, vascular, cardiothoracic, plastic, neurological, gynecology and many other distinct specialties that each have their distinct requirements in the development of workplace standards. The American College of Surgeons recognizes and supports the development of separate specialty-specific workplace standards that can facilitate the optimal working environment for surgeons in all specialties.

The sustainability of the surgical workforce requires a cultural and operational shift from endurance to equity. Surgeons' professionalism should not be treated as an inexhaustible resource. Establishing defined workplace standards serves several essential functions: protecting patient safety by reducing fatigue-related errors; supporting institutional performance through improved retention and productivity; and promoting equity by creating transparent expectations for workload, resources, and compensation.

Adoption of standardized workplace expectations would also facilitate benchmarking across institutions, enabling data-driven negotiation between surgeons and health systems. Such standards could be incorporated into departmental policies, employment contracts, and professional society guidance.

Conclusion

The absence of formal workplace standards for surgeons represents a critical gap in ensuring professional sustainability and patient safety. The framework presented here offers measurable, adaptable recommendations to define reasonable expectations for workload and resource access. By institutionalizing these standards, health systems can foster a surgical culture that values excellence without relying on unsustainable endurance, ensuring long-term benefit for surgeons, patients, and institutions alike.

This framework is intended to provide structured, evidence-informed guidance to support clinical and operational decision-making and does not constitute a prescriptive clinical practice guideline.

Precis: The absence of formal workplace standards for surgeons represents a critical gap in ensuring professional sustainability and patient safety. The framework presented here offers measurable, adaptable recommendations to define reasonable expectations for workload and resource access.

References

1. <https://www.nytimes.com/2019/06/08/opinion/sunday/hospitals-doctors-nurses-burnout.html>. Accessed 12/31/2025.
2. Shanafelt TD, et al. *Burnout and satisfaction with work-life balance among US physicians relative to the general US population*. Arch Intern Med. 2012;172:1377–1385.
3. Dyrbye LN, Shanafelt TD, Sinsky CA, et al. *Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care*. NAM Perspectives. Discussion Paper, National Academy of Medicine, Washington, DC. <https://doi.org/10.31478/201707b>
4. Dyrbye LN, Shanafelt TD. *Physician burnout: a potential threat to successful health care reform*. JAMA. 2011;305:2009–2010.
5. Shanafelt TD, Noseworthy JH. *Executive leadership and physician well-being*. Mayo Clin Proc. 2017;92:129–146.
6. Oreskovich MR, Kaups KL, Balch CM, et al. *Prevalence of alcohol use disorders among American surgeons*. Arch Surg. 2012;147:168–174.
7. Shanafelt TD, Balch CM, Bechamps GJ, R, et al. *Burnout and career satisfaction among American surgeons*. Ann Surg. 2009;250:463–471.
8. Hu YY, Ellis RJ, Hewitt B, et al. *Discrimination, abuse, harassment, and burnout in surgical residency training*. N Engl J Med. 2019;381:1741–1752.
9. Hall LH, Johnson J, Watt I, et al. *Healthcare staff wellbeing, burnout, and patient safety: A systematic review*. PLoS ONE 11(7): e0159015. <https://doi.org/10.1371/journal.pone.0159015>.

10. Pulcrano M, Evans SRT, Sosin M. *Quality of life and burnout rates across surgical specialties*. JAMA Surg. 2016;151:970–978.
11. Sinsky C, Colligan L, Li L, et al. *Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties*. Ann Intern Med. 2016;165:753–760.
12. Dzaug VJ, Kirch DJ, Nasca TJ. *To care is human – Collectively confronting the clinician-burnout crisis*. N Engl J Med. 2018;378:312–314.
13. Emergency physician shift work. American College of Emergency Physicians Policy Statement. <https://www.acep.org/siteassets/new-pdfs/policy-statements/emergency-physician-shift-work.pdf> . Accessed 1.13.2026.
14. American Society of Anesthesiologists Committee on Ethics. *Statement on fatigue*. <https://www.asahq.org/standards-and-practice-parameters/statement-on-fatigue>. Accessed 1.13.2026.
15. Maslach C, Jackson SE. *The measurement of experienced burnout*. J Occup Behav. 1981;2:99–113.
16. Shanafelt TD, Balch CM, Bechamps G, et al. *Burnout and medical errors among American surgeons*. Ann Surg. 2010;251:995–1000.
17. West CP, Dyrbye LN, Shanafelt TD. *Physician burnout: contributors, consequences, and solutions*. J Intern Med. 2018;283:516–529.
18. Han S, Shanafelt TD, Sinsky CA, et al. *Estimating the attributable cost of physician burnout*. Ann Intern Med. 2019;170:784–790.
19. Medscape. *Physician Burnout & Depression Report 2022*. <https://www.medscape.com/slideshow/2022-lifestyle-burnout-6014664>. Accessed 1.13.2026

20. American College of Surgeons. *Statement on Surgeon Well-Being*. October 2024.

<https://www.facs.org/about-acs/statements/surgeon-well-being/>. Accessed 1.13.2026.

21. Lockley SW, Cronin JW, Evans EE, et al. *Effect of reducing interns' weekly work hours on sleep and attentional failures*. N Engl J Med. 2004;351:1829–1837.

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